Feeding Yeast

Standard 3240-0202

Objective

Help students understand the role of sugar in living organisms and show how organisms use sugar and how the energy is lost to heat.
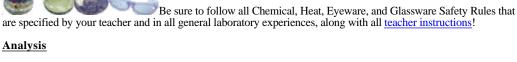
Materials

- yeast
- sugar
- 125 ml Erlenmeyer Flask
- 4" balloon, deflated
- luke warm water
- Masking Tape

Procedure

1. Measure out 5g yeast, 20 g of sugar, and 120 ml of lukewarm water (less than 100 °F).
2. Place yeast, sugar and water in a 125 ml Erlenmeyer Flask.
3. Quickly stretch the balloon over the openning of the erlenmeyer flask.
4. Seal where the balloon and flask meet with tape.
5. Shake and allow the reaction to occur.
6. Measure the diameter of the balloon at 2 minute increments then shake the flask again to further mix the contents.

Safety concerns:

Be sure to follow all Chemical, Heat, Eyeware, and Glassware Safety Rules that are specified by your teacher and in all general laboratory experiences, along with all teacher instructions!

Analysis

Time (min)	Diameter
2	
4	
6	
8	
10	
12	
14	
16	
18	

Write down what you observe happening in this reaction.

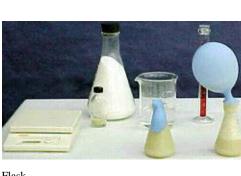Where did the gas come from? What do you think the gas is?

Explain how the gas was formed?

What conclusions can you draw from this experiment?

What do you predict will happen to the balloon after 24 hrs?

Variation

If you would like students to observe how heat energy is given off as the yeast consumes the sugar have them repeat the experiment in a different beaker measuring the temperature of the yeast over time as well. This variation will require that you use a thermometer that can measure in .1 °C. (Digital is recommended). Also you could leave one (with the balloon attached) out for 24 hrs to see what happens and have students make predictions and check their hypotheses.

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